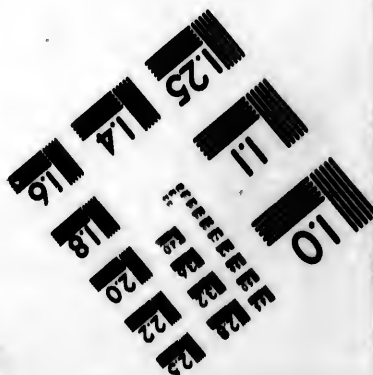
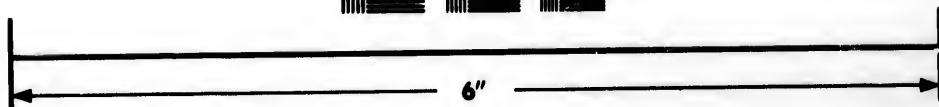
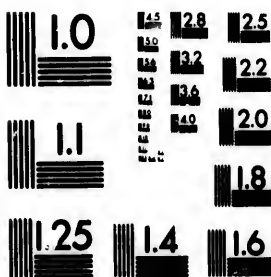


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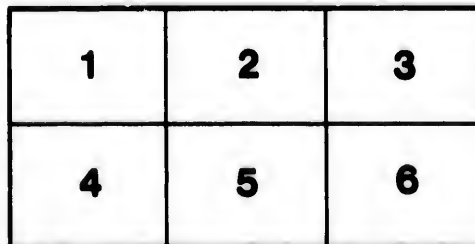
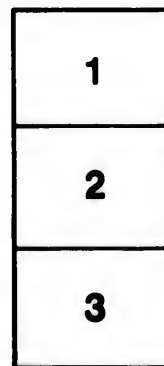
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ERRATA.

The Reader will please correct the following sheets, before the perusal, with the following errata.

PREFACE.

Page.	Line.	Word.	
9	8	5	<i>Read would for could.</i>
11	2	4	..... quantity <i>for</i> quality.
11	9	2	..... positions <i>for</i> position.
12	8	3	..... I have <i>for</i> I.

COMPARATIVE AGRICULTURE.

1	6	3	<i>Read</i> portion <i>for</i> position.
23	22	3	..... turning <i>for</i> ploughing.
35	11	5	..... Culter <i>for</i> Cutter.
36	17	1	..... for without it <i>for</i> for.
37	3	3	..... the better <i>for</i> the latter.
38	6	2	..... fiarin <i>for</i> fiarin.
38	19	5	..... spoils <i>for</i> Soils.
38	27	1	..... of possession <i>for</i> possession.
45	21	2	..... drains <i>for</i> nrins.
45	21	8	..... dig <i>for</i> viz.
48	27	6	..... factitious <i>for</i> fictitious.
49	1	3	..... factitious <i>for</i> fictitious.
50	6	5	..... there <i>for</i> then.
51	14	6	..... ever <i>for</i> even.
54	6	1	<i>After</i> constitution <i>add</i> so it is with plants.
55	28	2	<i>Read</i> wheat <i>for</i> what.
56	25	10	..... Note 1, form <i>for</i> from.
59	9	6	..... surmounting <i>for</i> surrounding.
61	24	4	..... where <i>for</i> when.
62	2	4	..... Pastime <i>for</i> pastiv
70	20	8	..... finishes <i>for</i> furnish
80	20	6	..... to <i>for</i> or.
81	6	7	<i>leave out</i> will.
81	11	6	<i>leave out</i> a.
84	6	8	<i>Read</i> sow thus <i>for</i> sow.
84	16	4	..... the <i>for</i> one.
84	19	2	..... Turnip <i>for</i> Turnips.
85	1	7	..... July <i>for</i> February.
89	12	6	..... would <i>for</i> could.
91	29	1	<i>leave out</i> and not certain.
91	24	6	put a full stop after ground.
92	6	3	<i>Read</i> malted <i>for</i> matted.
93	22	6	<i>leave out</i> it.

ESSAY
ON
COMPARATIVE AGRICULTURE,
OR
A BRIEF EXAMINATION
Into the state of Agriculture
AS IT NOW EXISTS IN
GREAT BRITAIN & CANADA.

BY THE
REVEREND J. E. BURTON, A. B. T. C. D.
PREBENDARY OF DUNOUGHMORE IN IRELAND, AND
MISSIONARY AT RAWDON, &c. &c. &c.

Quid de hominum genere dicam? Qui quasi cultores terræ
constituti, non patiuntur eum, nec immunitate belluarum esse ferari,
nec stirpium asperitate, vastari. --Cic.

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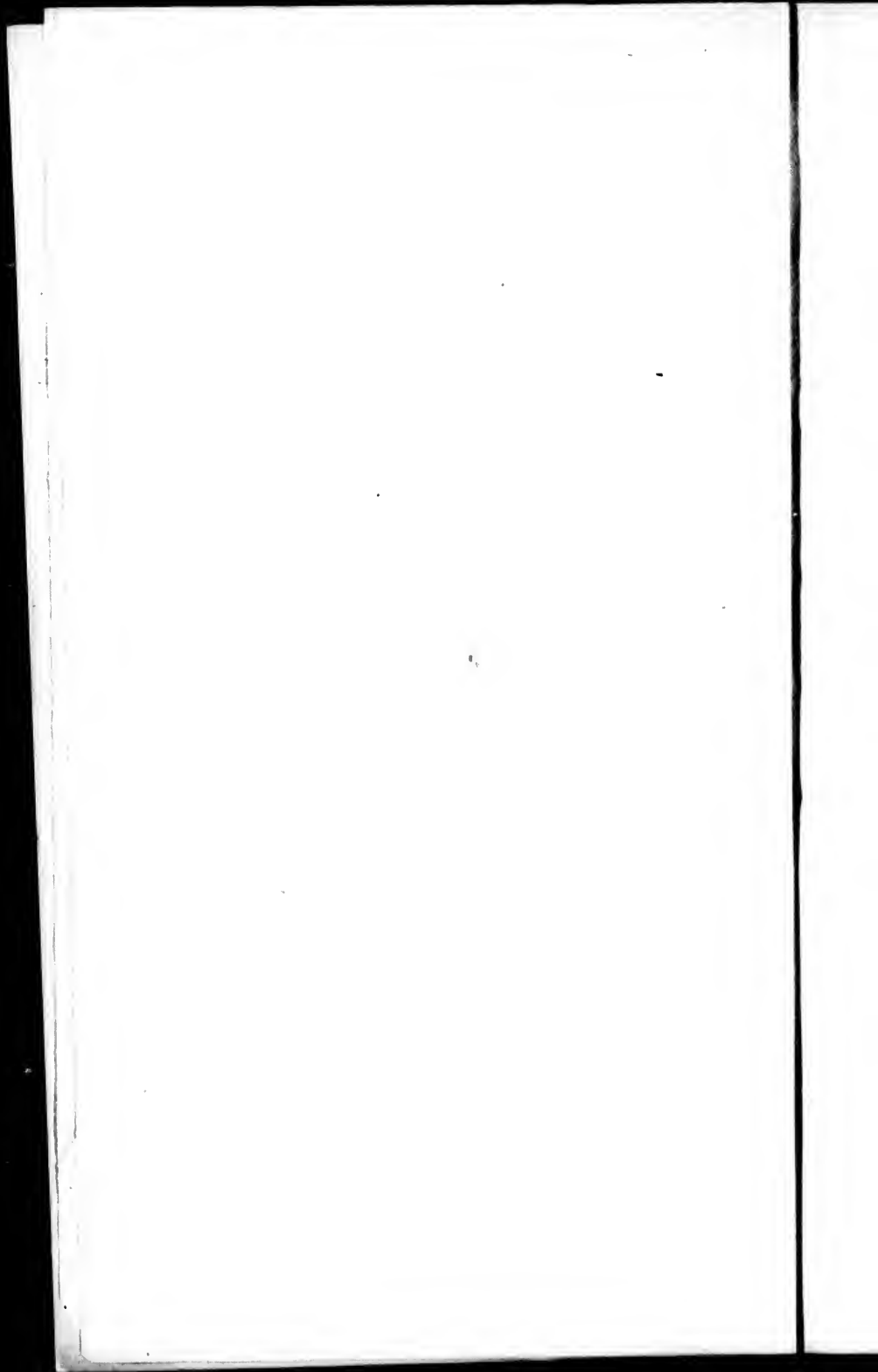
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TO THE PRESIDENT, VICE-PRESIDENT,
AND MEMBERS OF THE SOCIETY,
ESTABLISHED AT QUEBEC,
FOR THE ENCOURAGEMENT
OF ARTS AND SCIENCES IN CANADA,
THIS ESSAY ON COMPARATIVE AGRICULTURE IS
INSCRIBED WITH THE MOST PROFOUND
RESPECT BY THEIR VERY OBDIENT
HUMBLE SERVANT,
THE AUTHOR.

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ADVERTISEMENT.

It may appear extraordinary, to some of my friends, or perhaps to others, that in presenting myself before the public, I have not, in the first instance, elected a theological subject. To apologize, in some measure, for this; I beg leave to state, I have something of that nature in operation, which is not as yet sufficiently matured, for exhibition; and which, I propose bringing forward, in the course, of this year, or the next.— Having seen in the papers a proposition, on the part of the Society, established at Quebec, for the purpose, of patronising the Arts and Sciences; to receive a treatise, on the best mode, of regenerating the Canadian system of farming; I have

resolved to make, an humble attempt, to effectuate an object, of such *vital consequence*, to this colony. The period for producing this little treatise, being by the Society, limited, to the first day of March next, I am necessarily compelled to give, *Comparative Agriculture* a precedence.

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PREFACE.

AGRICULTURE is certainly one of the most important and interesting subjects to any nation: because it is intimately connected, with its prosperity.—A certain learned author has affirmed that, a man who could invent, any method by which, two grains of corn might grow, where one only grew before, could evince himself, a valuable member of the community to which he belonged: more valuable, than the most subtle politician, or the greatest warrior. Progressive improvement in the agriculture of a nation, necessarily implies, the general progressive prosperity of that country at large. This idea is adventitious: however, it is the united sentiment, of the best authors,

who have written, on the subject of political economy. And that this is no exaggerated encomium on agriculture, will appear, from the following brief considerations. Augmented improvement in agriculture, furnishes the farmer, with augmented capital. For if the farmer produces, upon a given quantity of land, by a reformed system of agriculture, double the quantity of grain, he has produced before, under an inferior management, he thereby doubles his capital : and this capital, so multiplied, diffuses itself, as a copious salutary stream, through every branch of the community. For example, by this improved system, the agriculturist employs more labourers : and thus the labouring classes are benefited by the farmer, in his career of melioration. By the same rectified system, the agriculturist fetches, more grain to the merchant : and thus, the merchant procures, a lucrative exchangeable commodity. The farmer carries, an increased portion of his redundant cash to the mechanic and manufacturer ; thereby aggrandizing them. He pays, the professional man, with additional promptitude and liberality : and the landlords rent is liquidated by him, with more

punctuality and satisfaction. Moreover, by a redundant quality of grain being produced in a country, through the instrumentality of the farmer, exportation is increased: the ship owner is benefited; and the revenue is multiplied, from the same source. Hence it must appear evident to every unprejudiced reader that, the position advanced above, are correct and founded in fact—namely, that progressive improvement of agriculture in a country, necessarily presupposes, the progressive melioration of every department of Society: and consequently, that agriculture, is one of the most important and interesting subjects, that can engage the attention, of the statesman or philanthropist.

Should the writer of the following sheets, prove so fortunate, as to contribute, in the smallest degree, to meliorate the agricultural interests of Canada: and thereby promote, in a measure, the prosperity and happiness of a magnificent country, he has adopted, and to which he is sincerely attached, he will feel himself abundantly remunerated, for any little trouble he may have taken, in putting his thoughts hastily to paper, in the accomplishment, of so desirable and gratifying

an object. It has been alledged that, the Canadian habitant, heedless of every instruction, and regardless of every useful precedent, will trudge on unchangeably, in the paths of his forefathers. But this is a libel on the Canadian character—for in my own neighbourhood, where I resided only seven years, many little changes for the better, in agriculture and other respects, have taken place, under my personal observation: and this emboldens me to expect that, under similar circumstances, similar effects will be produced elsewhere; and to cherish, the fond hope, that ultimately, a complete and scientific plan of cultivation, will be universally adopted, and diffused through the Canadas.

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ESSAY

ON

Comparative Agriculture.

CHAPTER I.

*The superior cultivation, and consequent beauty of
Great Britain.*

I THINK I may assert, without fear of confutation, that England, is one of the most beautiful and flourishing countries in the world. This is owing principally, tho' not altogether, to its superior cultivation. Every position of that opulent and happy spot, is arranged and managed, agreeable to the rules and principles, of the most approved and scientific agricultural knowledge. Enter that fascinating place, east, west, north, or south; in moving along, it presents you in every direction, with the pleasing picture, of a widely extended garden, richly interspersed, with cottages, villas, mansions,

hamlets and cities. As you advance, the heart of the benevolist is gladdened, at the view of such complicated excellence, exhibited on every side: such elegant and judicious arrangement in the farms: such tasteful simplicity in the farm houses: such profitable display of fruits and vegetables in the orchards and gardens: such neatness in the villages: such industry in the manufactories: such bustle and alacrity in the transaction of business, in the cities. Thrice happy England, may thy robust and florid sons, enjoy uninterruptedly and unmolested, the sweet fruits of their toils and their labours! In Ireland too, agriculture has arrived, at a great pitch of excellence. Of late years, the English mode of farming has been introduced, as far as it is practicable with the greatest advantage. The implements of husbandry, which formerly were, as they are now in Canada, rude and ponderous, are exchanged for light, but efficacious tools: and thereby animal labour is much curtailed, and capital saved. Such of its rich and fertile plains, as are not applied to sheep walks, and pastures for bullocks, and other black cattle, are skilfully and profitably cultivated, with white and green

crops. In this way Ireland has become, a sort of granary, to her sister kingdom: and her exports also, are far from being inconsiderable. Dearest Ireland! what pity, that the cold hand of poverty, or the fierce arm of bigotry, should for a moment, freeze the talents, or paralyze the exertions, of thy highly gifted and energetic sons. Scotland also is progressing rapidly in agriculture. The Scotch persevering and indefatigable industry, has effectuated much, in that art, generally, through the land of cakes. In the neighbourhood of Edinburgh and other large towns, the soil is cultivated, in a very superior style. The Scotch plough is proverbial for its elegance and efficacy. Were the same species of cultivation adopted in a country, such as Canada, where the soil, if not better, is at least on a par, with that of Great Britain, such an adoption, would unquestionably issue, in the most beneficial results. Agriculture would necessarily improve, and ultimately flourish; and capital freely and abundantly circulate, through all the branches of the community: giving life and energy to the body politic, as an increase of wholesome fluid in the veins, gives spirit and renovation, to the human frame.

CHAPTER II.

*General Arrangement and Management of a Farm
in Great Britain.*

When a farmer, of skill and judgment, undertakes to rent, or manage a portion of land in Great Britain, his first object is, to divide, and subdivide it, agreeable to the general plan, he has in contemplation. His fences are repaired, or newly made, so as to correspond, with this division, and subdivision. In case, a house is to be built, he will take care to erect it, upon the most eligible scite: and will observe the same rule, with regard to the erection of his offices. He will not build too near the high road, for that would subject him to annoyances and inconveniences: nor too far from it, because that arrangement would cut up, and waste his land, by his approach being too extensive. He will derive further advantages also, by the judicious adoption of an eligible situation. Being placed, not very far distant, from the centre of his property, he is convenient to his tillage, that always requires manure; and such other portions of his land, which require periodical dressing. And he will

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be in a position, from whence he can view, with facility, at all times, any trespass that may be committed upon the premises. Suppose his farm to consist of sixty acres of land, the same extent of most of the Canadian farms, he will make, if not exactly, one very similar, to the following arrangement. He will appropriate thirty acres to grass; and the other moiety to tillage. He will divide his grass land probably, into three equal portions. Ten acres, he will set apart for meadow: ten acres for general grazing: and ten acres for a change, or reserve.* The latter he will partially plant, in all probability, provided he has a long or permanent tenure, with such timber trees, as may best suit hereafter, the purposes of agriculture. The ten acres that have been in meadow the first year, he will have in grass the second year: and the general pasture division, that was occupied with his cattle the greater portion of the first year, will be converted into meadow the second year, and this process, of alternate cutting and grazing, of the same twenty acres, will

*Of this reserve he will probably set aside two acres for the scite of a house and offices and for a garden and orchard.

continue for a length of time, say ten, fifteen or twenty years; unless some unfavourable circumstances occur in those divisions, which demonstrate the necessity, of making some alteration in this system. It is a well ascertained fact that, the older meadow or grass land is, the better; provided, it does not run into *moss*—overrun with *weeds*—or become, what the farmers call, *hidebound*. In such cases, it must be broken up immediately: and continue in tillage, a few seasons, until the malady is removed, by skilful management: and another division,* in the mean time, substituted in its place, for the purpose of affording, the usual annual supply, of hay or grass, for the cattle. Two divisions should never be broken up together; as this extensive change in the general plan, would

* The division that is to be substituted in the place of the diseased division is that hereafter to be described which is destined to grow peas or beans. The crop of peas or beans must be sowed early in spring and when matured must be removed quickly and altogether from the field, the field is then to be ploughed without delay and laid down with timothy seed, or with some of that and red clover, or white clover or trefoil. The meadow seeds must be shook on or immediately after the first of September. If sown after the twentieth the land will not afford meadow the following season. The diseased division after it yields its crop is to be ploughed in autumn and to be appropriated to peas or beans the following spring so as to keep up the regular rotation of crops.

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derange altogether, the economy of the farm. These evils never advance however, so rapidly, as to prevent the provident farmer, from taking his measures in due time. In case two or more divisions are infected, about the same period, the better way would be, to break, one division every year, until the farm is again restored to its usual train. Some pastures have remained in grass in Ireland, with advantage, for a period of one hundred years. Should no sensible deterioration take place from the above causes in the meadow or grass divisions the herbage will every year, become more delicate in its pile and more nutritive, and of course, more profitable; provided, after every second or third cutting, that is every fourth or sixth year, a reasonable coat of manure is bestowed upon each division. If however, the land is naturally good, and deep, a profitable loam, or a rich clay, for example, it may be cut for meadow, by pursuing the plan of alternate cutting and grazing for many years, to great advantage; without applying one pound of stimulus or manure of any kind. I have seen land in Ireland, managed in this way for many years: and land too, of rather an inferior quality;

certainly below, the medium standard of land in Canada; and instead of its becoming impoverished by this sort of routine, it was rendered, every succeeding year, more profitable. It may be relied upon then, as a general principle, subject to some few exceptions, that the longer, land remains covered, with the beautiful green, nature has bestowed upon it, the more valuable it will prove, for meadow or pasture. The third grass division, a portion of which, I presume to have been planted for the construction, of farming implements, is resorted to for the animals, when—the weather continuing dry for any length of time—when the sun and parching winds absorbing the moisture of the soil—or the cattle eating the general pasture division too closely, render it unfit, for the purpose of grazing. By this occasional change, many advantages are attained. The animals get an abundant supply, when they want it most, in the second grass division: and accordingly, thrive apace. They are removed from a spot, that they begin to loath, from its being trampled by their feet—polluted by the dust—and rendered fetid and nauseous, by an accumulation of evacuations. The first grass division,

by this movement, gets time for renovation : and becomes fit, shortly again, for the reception of the stock. Thus the farmer procures, a continual supply of good and wholesome herbage for his cattle, consequently they improve rapidly, in bone and flesh ; and amply reimburse him, for his judicious arrangement.

CHAPTER III.

Subject of the former Chapter continued

The British farmer, having divided his thirty acres of grass land into three equal portions, and having arranged in his mind, which was to serve, the first year, for meadow ; and which for common pasture ; and which, for reserve ; he next turns his attention, to an arrangement, with respect to his tillage land. He will, in all likelihood, divide the thirty remaining acres intended for tillage, into three equal portions ; as he has divided, his other thirty acres, that are to remain unbroken : ten of these, he will put under wheat : ten under peas or beans : and ten under green crops and jardinage. The wheat crop is, if possible, always to be preceded, with two meliorating or en-

riching crops, the peas and the jardinage: as wheat requires land in good heart, and well manured. If his pea land is very poor at first, he would do well, to plough it up, the previous autumn, to enrich and cleanse it: giving it another ploughing, the following spring, previous to the process of harrowing in the seed, and after the peas are mowed, he would give it another autumnal turning, so as to kill the weeds and grass effectually: and render it altogether fit, for the reception of the green crops and jardinage. The green crops and jardinage, which succeed the pea or bean crop, are potatoes, bagaruga, alias swedish turnips, red or white norfolk turnips, mangle wurzle, carrots, beans, &c. &c. These are all cultivated in drills: and manured or dressed exceedingly well: and any of the above named, according to the farmer's fancy, may either be preferred altogether to the rest; or the quantity of any, augmented or decreased, according to existing circumstances. Whilst those crops are growing, and until such time, as they are separated from the soil; the land must be kept clean with the plough; and with the hand: with the plough in the furrows, and with the hand, between the

plants. And when they are removed, there will be then, ten acres of soil, in the very best condition, ready to receive the succeeding crop of wheat; which will produce, as much grain under those circumstances, as would be produced upon double or treble that quantity of land by a dissimilar process. The same routine follows again, the peas or beans succeed the wheat, and the green crops and jardinage the peas, and the wheat the green crops and jardinage, and so on; and this rotation is applied to each of the three tillage divisions, in regular succession, so as to afford the farmer, in this way, every year ten acres of peas; ten acres of green crops and jardinage; and ten acres of wheat. In process of time, should the land become too rich for peas, oats, barley, rye, flax, or some of all, may be substituted in their stead. From the general sketch I have given of this mode of cultivation, as practised in Great Britain, it must be obvious to every rational man that, it is highly productive, for the support, both of man and beast. The wheat, in one of the three tillage divisions, being produced, in great abundance, will supply the family of the cul-

tivator, with best bread ; and furnish a large surplus quantity, for the market. The peas, in the second division, yielding well, are excellent for culinary purposes ; and will feed a vast number of swine and poultry. And the straw, with that of the wheat, assist, in maintaining, during the winter and spring months, a number of cattle. The potatoes, in the third division, will serve, as a valuable staple commodity for the household : and the superfluous portion can be blended with advantage and economy, with the peas, in feeding the swine : or may be transported to the market. A portion of the red or white norfolk turnip, will be served at table ; and the redundancy, given in small quantities daily, in the beginning of the season, to the sheep ; to preserve some fat, and keep others, in health and strength. And when the norfolk is deteriorating, or expended in the spring of the following year, the swedish, which is a better keeping vegetable, than the norfolk, will naturally supply its place. The mangle wurzle, in the same division, in conjunction with any sort of fodder, will afford abundance of milk and butter from the cows ; during a severe win-

ter, when those comforts cannot be procured in the country, in any* other way so well, save at an enormous expense. The carrots can be applied to culinary purposes; and are an excellent wholesome food for working horses. And the beans are applicable to the same end. In case, it is an object with the farmer to fatten beef, he can do so profitably with his reserve grass division to a limited extent in summer: and satisfactorily in winter, with his superfluous peas; or with his spare potatoes; or any of the productions growing with them in the third tillage division, the beans† excepted. Thus, I think, I have satisfactorily proved my former affirmation that, a farm managed, a la mode angloise, is abundantly productive and beneficial. It will not only directly aggrandize the individual, who is chiefly concerned; but will indirectly extend its utility to all the various branches of the community, in that way, I have already described in the preface.

* Chopped turnips are excellent food for milch cows, united with hay or other fodder.

† I am confident that beans, if ground, would fatten beef well; as they contain a large quantity of farina.

CHAPTER IV.

General arrangement and management of a Farm in Lower Canada.

It is with the greatest pain and reluctance, I am obliged to say, that the arrangement and management of a farm in Lower Canada; when cultivated by a habitant, furnishes nearly, a complete contrast, to the arrangement and management of a well regulated farm, of equal quality and quantity, in Great Britain. The habitant has his arrangement: but alas! it is one of the worst that can be imagined. Having selected a spot for his house and offices, immediately* adjoining the high road, he lays himself open thereby, to a series of inconveniences. His household are liable to be injured by all sorts of passing animals: and are subject to be impeded, in the prosecution of their avocations, by saucy travellers and gossipping neighbours: and his property is more exposed

* I am happy to see there are some exceptions to this general rule and that some Canadians coinciding in opinion with me have thrown their houses back from the chemin de front some acres. This should be adopted generally hereafter and the edüices thrown back farther.

at night, to every unprincipled marauder, than if he had chosen a more central situation. Independant of these inconveniences, damage from the farmer's own cattle, and trespass by the neighbouring ones may be committed unperceived, to a considerable extent, at one extremity of the land, whilst the farmer apprehends no evil at the other. He is too distant, from the seat, of his principal operations. Locating himself centrally, he ought to have his divisions, that require peculiar care, and demand annual and other dressings, immediately in front and to his right and left. In this position he could cart out his manure and his dressings with more facility and expedition: and perceive from his window, any incroachments; seizing without loss of time, those animals, that invade the most valuable part of his property. The next mal-arrangement to which I shall advert, is the manner the habitant disposes of the two principal divisions of his farm—namely, the divisions he appropriates to his tillage and grass. Having set apart an acre or an acre and a half at most for meadow; a very small patch for his garden; none for an orchard; and a fair proportion, say ten acres for his wood;

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he applies all the remainder of his sixty acres, to the above two denominations. What he calls his grass division, is perhaps, one of the most melancholy spectacles in nature. No grass growing; but a few tufts here and there scattered, that have forced their way through the tillage, to its injury, the preceding year: and which are not capable of feeding, any sort of cattle sufficiently. The rueful consequences are, that the black cattle are stunted in bone and flesh: the sheep, in weight, condition and wool: and both kinds, gradually and progressively dwindle. To render the case still more deplorable, the swine in summer, are let loose without rings or remorse, upon this ill fated allotment, which they tear up in various directions; finishing the picture of this wretched scene. And it is not, until late in the year, that the cattle, thus stunted, get into any sort of condition; by being admitted into the after grass of the tillage division. In spring and summer, the time, that all sorts of cattle in Great Britain, and other parts of the civilized world, are improving in bone and condition, the stock of the Canadian, are absolutely starving of a dry year; and half famished in a

moist or favorable one. But were the Canadian, to convert his wood division, into a *grass reserve*; and shift his cattle according to circumstances, they would, of course, thrive uniformly like the cattle of other nations. I have observed before, that the European farmer, always removed his stock, from the general grass division to his reserve—either, when the former is eaten rather close—or when it is scorched by the wind or sun—or is rendered arid and jejune, by the absence of dews and rains. This the intelligent habitant ought to do also. And the manner in which he is to convert his wood division into a grass reserve, I shall now endeavour to explain.

I have already supposed the habitant to have ten acres of wood land. This he should *brush* with care; cutting down every shrub and small tree of six inches diameter and under; and no tree above that size. Having burnt the whole of these, and any rotten stuff or rubbish, that may be found in the way, he must harrow in, from the first to the twentieth of September, half a bushel of best timothy seed to the acre: or if the soil is naturally adapted to the seed, he may decrease a quantity of the timothy, and

add some red or white clover or trefoil. This compartment, must not be grazed, until the grass has established itself well in the ground: and when it is so established, in the course of nine months or thereabouts, it will be a most valuable acquisition to the farmer. He ought to commence eating it with sheep.* It may be doubted, whether it will grow to advantage under such circumstances: but that it will, I have only to refer, to frequent exemplifications in Upper Canada and in the States; where, the advantages of the woods and the champaign are comprised in one and the same place. I have sometimes seen, in Lower Canada, an abundant sugary, produce good grass: and the farmer, in order to accomplish this most desirable object—that of converting wood land partially cleared into grass, has his choice—either to pursue the direction given by me above—or to follow the example of his successful neighbour, who has converted his sugary into pasture. The farmer will require to cut down every year, of his wood;

* When land is first laid down with grass seeds or clover it shou'd not be fed for some time with horses or any heavy cattle. as they tear up with their feet the tender blades of herbage before their roots are sufficiently established in the ground.

about half an arpent; for his fuel, and for the other purposes of his farm. In order then to do this, to the best advantage, I would recommend him, to hew down his timber regularly; and not at random. In this way he will take twenty years, before he comes, to the end of his wood: and by that period, the half acre that he has felled the first year, will be fit to chop again. In this way, the wood compartment of ten acres, will supply fuel and other matters necessary for husbandry ad infinitum. In order, however, to attain both objects, grass and fuel, from this division, he must observe the following precautions. When the second growth of timber begins to spring he must carefully preserve, all those young plants, that are best calculated, to make afterwards, good fuel: and with equal diligence, destroy all others, that are not fit for that purpose; and are by crowding, likely to extirpate, or keep down, the grass of his reserve. In England, the farmer takes care to preserve a flush of grass, or a plentiful bite, as he calls it, for his working beasts in spring and summer: and by this means, he has his oxen always stout and adequate to perform the labours of the tillage depart-

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m^{ent}. But in Canada, the converse of this is the case, *the first step therefore towards regeneration in Canadian agriculture*, is to make such a provision of nutritive grass for the cattle, in the latter part of spring and in summer, that they can, at all times, turn out, in strength and spirits to perform the work, *comme il faut*.

This ability is to be obtained, by a change from one *good pasture* to another *equally good*: by manuring or dressing the meadow lot, *which is to serve for pasture the following year*: or by light dressing one grass department, whilst the cattle depasture the other. *The next step towards regeneration in Canadian agriculture* is to set apart, a considerable portion of the farm, for hay. Without a plentiful supply of hay in winter and spring, it is almost impossible to support the strength, and preserve the health of working cattle. For if the animal is wintered badly, he will not have the ability to perform his work in the spring, and early part of summer, when his services are most requisite and valuable. The Canadian farmer must therefore resolve to appropriate, nine or ten arpents to meadow, instead of the liberal

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supply, - of one acre, or one and a half; for without a plentiful fund of this valuable commodity, his beasts cannot work as they ought.* Even of the gay little hay patch that he has, dressed by nature's hand, with little or no co-operation of his own, in livery splendidly green, oft does he lop off a portion, for the completion of an object comparatively insignificant; as if, he envied the very existence, of the most beautiful and valuable spot of his farm. This blundering will not do, the Canadian must appreciate as he ought, the merit of the fertile little mead he has, and then, instead of curtailing, he will gladly augment its quantity, and improve its quality, to the best of his abilities.

CHAPTER V.

Subject of the last Chapter continued.

Having in the last chapter paid some attention, to the best mode of producing a plentiful supply of good grass and

* For feeding horses of a year that hay is scarce, carrots are a wholesome and nutritive substitute for it. These united with any kind of straw and oats, or beans, will keep these generous animals in good plight and spirits.

wholesome hay, upon a Canadian farm; I shall now proceed to bestow, some further attention, upon the most approved method of obtaining, good corn and good green crops. But before I do so, I must make some preliminary observations, upon the present state of cultivation in this country; as far as it respects those productions. The Canadian always endeavours to plough, the whole of his land, intended the following spring for tillage, that is, the whole of the pasture of the current year, in the fall. This autumnal inversion of the sod, is an admirable practice: altho' it is often very imperfectly executed.

It is well known, that every time, the earth is turned, it is fertilized, by the influence of the atmosphere. By performing this process well, you will kill weeds of every kind, annual and perennial, and render the land, friable and open, affording the tender fibres of the roots of plants, opportunity to spread, and seek nourishment freely. But by turning the soil in autumn here, you not only attain those desirable ends, but you ensure also the ameliorating action of the frost and snow, upon the land, which is immense; during the whole of the winter. Frost and

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snow have little effect upon land in a state of grass: but it is quite the contrary, with regard to land, when broken up. These substances pulverize and enrich it, in an extraordinary degree. It is owing in fact, to this scientific and judicious practice, that we have bread in such abundance, and so cheap in this country. And I will be bold to affirm, were it omitted for a few years, the old, and nearly exhausted lands of Lower Canada, though originally good, would not produce any thing. The Canadian therefore, should make every autumn a *powerful exertion, to turn up, the whole of his land, intended for the subsequent year's tillage, before the frost closes, the generous and teeming bosom of the earth, upon his labours.* But if, the operation of ploughing, was better executed by the habitant, the effect would be still greater; and this improvement, connected with a regular rotation of legumious* crops, that improve the land, as well by their nature, as by the manure that sometimes accompanies them, would render the soil of Canada, one of the most pro-

* Leguminous plants do not exhaust the soil as they derive the principal part of their nutriment from the atmosphere.

ductive in the world. Let the Canadian farmer, only follow the practice of the English agriculturist, and his property will certainly produce, in some cases, threefold. But supposing it produced by the adoption of this plan, only an increase upon the double or half that again which I'm sure, might with safety be guaranteed, what an immense acquisition would this augmentative be, to the individual, and the public.

The incredulous Canadian farmer who may doubt this calculation, can set apart, one acre, of his farm, in the way of experiment; and till it, in the following manner; and I will venture to repeat, it will produce an hundred, or fifty per cent, at least more, than it did, under the usual preparation of the country, and pay besides all additional expenses. The experiment, must, however, be fairly conducted. The land must not be too rich (of which by the way there is not great danger) nor too poor. It must be carefully fenced: and the process accurately pursued as directed. The piece of ground so set apart, must get a winter's fallow. The land must be ploughed, if a stiff clay or stiff loam, with four bullocks or four horses, so as to turn up some soil to the

surface, that probably, never had seen the light before. Especial care must be taken that, the sod must be *well turned over*; so as to have all the roots of the grass and weeds set upside down. The following spring provided no weeds or young grass appear, a crop of peas or beans must be sown broad cast, and harrowed in, with a good iron harrow, or what I would prefer, sown in drills. If the latter plan is adopted, the plough must run three or four times, in the early part of the summer, between the drills, to earth the plants, and kill the weeds in the furrow. And the other weeds between the plants, must be taken away by the hand as described on a former occasion. But if weeds or grass, have appeared in the spring, the land must have then an additional ploughing. After the peas or beans are taken away, the acre must get another winter's ploughing, by being well ploughed as before. The following spring, potatoes, turnips, beans, cabbage, indian corn, tobacco, onions, any, or all of these, are to be drilled in, on good manure of any kind, at the distance of three feet in the furrows. As in the proceeding year they must be kept accurately clean with a two or one horse

plough; and a leader, to prevent the animals from injuring the crops, which however, would not be necessary in England or any place, where the beasts are well trained: the other weeds not in the furrow, should be taken away, as before.* After the removal of the second crop, the land is to undergo, a third winter's fallow. In the following spring, as soon as the soil is sufficiently dry for the process of harrowing, the wheat, is to be sown broad cast; and lightly harrowed; and if kept free of weeds (which is not the fashion of Canada) it will produce a most abundant crop, amply remunerating the farmer, for all his trouble, in the augmented proportion, I have promised. The habitant may allege that, this mode of husbandry is complicated: but altho' it is much better, it is very little more complicated than his own. According to his own system, he will turn up his soil every autumn for winter fallow;† and the only additional ploughing he has to

* How much better would the Canadian children be occupied at this and other light works, than in idly parading the roads, as they are wont to do. I say this, with the affection of a father, and therefore hope, it may give no umbrage.

† I do not use the word fallow in the sense it is generally made use of in Europe, I only mean by that term a late autumnal ploughing.

perform, is, to run a light plough, three or four times through his furrows, with one horse or bullock, if the land is mellow; or with a pair of steady horses, or with an equal number of steady bullocks, if the land is heavy, in summer time, when he has little or nothing else to do. He must manure his tillage, he will say, with a shrug, the second year, during this rotation: but would he not himself recommend to manure, potatoes, cabbage, indian corn, onions, and his generous care: killing, sociable, narcotick, tobacco, whenever he would plant them. I presume, when his eyes are open, he will have no objection, to eradicate the weeds, that prick his fingers so confoundedly, when he is preparing to collect, and thresh his corn. This desirable object, of national regeneration in tillage, can therefore be thoroughly accomplished, by a little horse hoeing,* and manuring, and by employing his children, now and again, in gentle exercise, that will pro-

* Horse hoeing is the operation of earthing up plants to the right and left with the action of a plough drawn with one or two animals, I prefer having the work executed with one, as there is less danger in this way of breaking or wounding the crop. One man with a plough and horse will hoe more land by this method, than ten men with the hand hoe. The plan is convenient and economical.

mote their health, and gradually train them to habits of industry. The habitant may vainly think that, he insults the ashes of his forefathers, and himself indirectly, by forsaking in this particular, the footsteps of his progenitors. But surely length of time, should not consecrate delusion, or establish errors. Did I discover any thing defective or faulty in the habits of my ancestors in agriculture, or any thing else, I would endeavour to discard it instantly: and consider I had done them honor, by proving to the world, they had a descendant, capable of bursting asunder, the disgraceful bonds, of ignorance and prejudice.

The French are the most ingenious people in the world. Almost every new invention originates with them. But the Canadians are descendants from the French, they should therefore possess the same talent for invention: and the talent of invention, being nearly allied, to the capability of imitation, they should not hesitate a moment, to imitate, whatever is rational, scientific, or philosophical in any other nation. But the Canadian may be prejudiced against the old country subject, supposing that he entertains sentiments, unfavourable towards him,

and will not condescend to take instruction from that quarter. But why should any antipathy or prejudice exist on either side? Do they not both inhabit the same soil, which they hold in perpetuity? Do they not belong to the same liberal, noble and impartial King? Is there not a community of interests existing between them, in every particular? Away then with unbecoming jealousies and let all, without exception, unite in instructing each other: instruction to become, not only good husbandmen and agriculturists, but good citizens and neighbours.

CHAPTER VI.

Canadian Ploughing, &c. &c.

Having panegyricized in the last chapter, the excellent and admirable plan of ploughing the land late in autumn, which is the general fashion of Canada; and pointed out, its beneficial effects, I shall now make some observations, on the particular mode, the Canadian farmer has adopted, for the purpose of carrying that process into effect. You will recollect, that although, I have bestowed some praise, and with justice, upon—the *prac-*

tice, yet I have not said any thing in commendation of—the *manner* of executing this most important operation. In fact, without swerving from truth, I could not do so ; for in nine cases out of ten, the farmer performs this task indifferently. In the first place, it is very injudicious, to plough horses and bullocks together ; for a very plain and simple reason, the horse steps quickly, the bullock steps slowly. This is so notorious a circumstance, that no one will presume to deny it : however, you never see, the habitant yoke his team in any other way. Ignorance, or fashion, or prejudice, induces him, to work his cattle in this way, in opposition to plain matter of fact. Sometimes you see, two stout Canadian horses, for the horses are good and well adapted to every species of husbandry and labour, tugging and pulling a clumsy plough along, and not only the plough, but the bullocks, in a great measure : for the animals cannot, to use a military phrase, step together ; and therefore, seldom cooperate. Another time, which is worse, they plough unicorn ; the horse in front, and then, one unfortunate horse has to perform, the drudgery of two. In the second place, the bullocks are not pro-

perly harnessed. They are harnessed by the horns, and draw by the horns, instead of pulling by the bodies. This must be an inconvenient operation to the poor brutes, more inconvenient, than drawing by the tail, as we are told they did, when Virgil wrote the Georgics. The Canadian plough has some trifling advantage: as it rests upon wheels, which steadies it something; and prevents it, from rising or sinking too suddenly: it is however, upon the whole, heavy and complicated, and in my opinion, inferior to the Scotch or English plough. A plough is a heavy instrument at best; it ought therefore to be constructed, light as possible; but not so much so, as to render it too unsubstantial, for a very laborious service. When a soil is much exhausted, which must be the case here often, where the lands are giving white or corn crops every second season, I may say time immemorial, without a particle of manure or stimulus being added, to assist the fecundity of the earth, a deep ploughing in autumn is indispensably necessary. Under those circumstances, and particularly, if the land is argillacious, and consequently ponderous, I would advise, the intelligent farmer, to yoke four horses or

four bullocks, that will step together evenly; for to perform good work, as I have before indirectly hinted, a great deal depends upon the general co-operation of the animals; which is the result of even stepping. Prepared in this way, he can turn up his land as deeply as he wishes, and the land being turned, some time previous to the setting in of the winter, by a long Scotch or long English plough, or even with a Canadian plough which, in this case will answer the purpose tolerably well, he will have his field, in a good state of preparation the following spring. But if the soil is sandy or moory, and especially if it is not dirty, with weeds or grass, this expensive and troublesome preparation, is by no means necessary; as the land can be worked, in a much easier and more profitable way, by using a light plough without wheels, made after the Scotch, Irish or English fashion; drawn by two good Canadian nags, that pull kindly together: or by two good stout Canadian or States steers, that do the same; and are capable of moving briskly along. For if the animals do not move slipantly, the process will prove too tedious, and the time for fallowing, and sowing, which is short in

Canada, will soon pass by, and the work remain unaccomplished. When the soil is thus sandy or moory, the plough has always a propensity to sink too deep, and were the injudicious ploughman, to use a long heavy plough drawn by four stout horses or bullocks, his greatest muscular strength, exercised with unremitting care, could not prevent the instrument, from penetrating occasionally, too deep into the land: and thus, the process would be rendered irregular and unsatisfactory. One moment, the sod, would turn up too deep, by the weight of the plough and momentum of the four animals; at another, it would turn up too light, by the counter exertion of the ploughman. The best plough to use, in general, in Canada, is a light two horse plough, except when, extraordinary heavy work is necessary as alluded to above, in order to extirpate deep rooted weeds or grass, or to turn up fresh earth, that has not been previously in play. Autumn, and not spring, is the time, for bringing new clay, by deep ploughing, into action. When you furnish a new bed of earth, for the growth of plants, late in the year, it is not brought at once into operation; and so much the better,

for it is rooted up by the plough, in a state, at first, almost entirely incapable of producing vegetation. This is a fact, well ascertained by experiment,* and can be easily explained. The earth derives its fertility principally from the atmosphere; and the influence of the atmosphere, does not penetrate, more than a few inches into the earth. When therefore clay is turned up, from a bed below this influence, it comes up, in a crude, wild, barren, unproductive state, which requires time, to alter and meliorate its nature. This opportunity is afforded by deep autumnal ploughing. And after it has continued, a few months idle, under the joint influence, of atmosphere, frost and snow, it becomes capable of fructifying, in a most extraordinary degree. But if, having the same object in view, you plough deeply in spring, you will meet with disappointment: as the new bed of clay, will not have time sufficient to alter its wild and savage nature: and you will deteriorate, instead of improving

* If you sink with a spade into the ground four feet and take from below a given quantity of any sort of clay and immediately shake some seed into it, the seed will not germinate but when the clay has been molified by the air it will do its duty.

your crop. The best working plough I have ever seen in Canada, was, of the following dimensions. The beam one yard twenty one inches. The handles one yard fifteen inches. The low rail, connecting the handles, twelve inches. And the top rail twenty-one inches. The sole and cross were proportioned to the above dimensions. And the sock and cutter not more than half the weight, of the sock and cutter of a Canadian plough; say twenty-one pounds. There is a little contrivance, which I have perceived in the Canadian plough, to render it durable, of which I highly approve. This is a small rod of iron, of about a quarter of an inch diameter, that fastens the beam of the plough firmly to the soal. This prevents a very common accident, that occurs in Europe, the bursting of the soal from the cross: and when this mishap takes place, of course, the operation of ploughing is altogether suspended, until the machine is organized anew. The accident is caused, either by coming in contact, with a root of a tree, a stone, or a rock. Sometimes it takes place, in heavy land, without the presentation of stones or roots; when the instrument is too much pressed, by the

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momentum or weight of heavy cattle: The chagrin, that rises in the mind of the ploughman, when this paralyzing accident occurs, in a hurry, and late in the seed season, can only be conceived, by the agriculturist, of methodical habits, who anxiously palpitates, to have every operation upon his farm, accomplished in due rotation. I do recommend then, in the strongest manner, that this eligible little provision may never be omitted, by the Canadian: and that, the old country farmer, as he is sometimes called, may adopt, so rational and useful an improvement. In a wood farm, this contrivance is indispensably necessary: for in that place, no plough but one of iron, could last an hour, but of a wood farm hereafter.* Besides this short light plough for spring sowing and general use, the farmer ought always have at his hand, the long plough, after the fashion I have described, for the purpose already mentioned. And he ought to have one general principle uniformly impressed upon his mind—that the oftener he stirs his

* In case I find that this little treatise has been of any benefit to the Canadian population, I will endeavour to serve them farther by furnishing them hereafter with another essay on the best mode of managing a wood farm.

land intended for tillage, either with the plough, the harrow, the spade, or any other tool, the latter, as I have already stated, every time the earth is moved it derives from the atmosphere an augmentation of fertility and accordingly in every country, where agriculture is well understood, the moment one crop is out of the ground, the land is tossed up again, by some process or other, to enrich it for another.

CHAPTER VII.

Harrowing.

The ploughing of Canada generally speaking, as far as I have seen of it, is badly executed : but the harrowing is still worse. Indeed, the bare inspection of the instrument of which, they make use, will be sufficient to convince any man of experience, of the truth of this assertion. There is not a morsel of iron in the whole of it. The teeth are constructed of hard wood, which could be somewhat improved, were they roasted in the fire : but even this obvious little improvement has not as yet been adopted. When this imperfect tool, is applied

to a soil, by nature friable and crumbly, it answers the purpose pretty well; provided, the land is not much infected with strong weeds, or impregnated with strongly matted grasses; such as scutch and fiarin: but if thistles, and stout perennial weeds, or a vigorously spreading pile of any species of grass, usurp the tillage land, the ground derives no benefit, from the operation, of this wretched instrument; and the crop very little. The harrow so constructed, can make no impression, upon the soil thus circumstanced; because, the weeds and grass that hold the clay together, are stronger than the teeth of the instrument; consequently, the earth, cannot be disturbed sufficiently, to tear up the dirt, that monopolizes and soils it. The seed is not covered enough. Some is devoured by vermin; and the rest, being too much exposed to sun and wind, by not being buried sufficiently below the surface of the earth, and having powerful competitors, in the weeds and grasses, to contend with, that have had priorly possession of the sod, cannot possibly arrive, at any degree of perfection. Thus the tillage land is comparatively injured, and the crop lost, or debilitated, in a

great degree, by the ineffectual efforts, of this ridiculous tool. If this harrow is ill calculated to do its duty, in some cases, when loose and loamy land is in question; how much worse, is it calculated to act with advantage, when soils of a more ponderous and stubborn nature are to be managed. What impression can it make upon a stiff white or yellow clay, or upon a clayey loam, although such soils may be altogether free from every intruder? But if, they happen to be, circumstanced differently, covered like the light soil, with filth of every kind, you might as well make use of a pick-tooth to plough them efficaciously, as to think, of making any beneficial work upon them, with a Canadian harrow. Let this worthless toy then be exploded altogether, and something rational, substituted in its stead. There are two sorts of harrows of which they make use in Ireland and elsewhere to advantage: the small light harrow with hinges in the middle: and the large heavy harrow called a *break*, both armed with iron pins or teeth of different dimensions. And no farm having a variety of soil, can be worked satisfactorily without them. Some crops, such as turnips and peas, require

to be covered lightly whereas others such as wheat and oats love to be covered deeply. For the former purpose, the light hinged harrow is well calculated, as it accommodates itself readily, to the shape and configuration of the land, by the action of its hinges: and does not bury the seed too deeply, from the shortness of the teeth; at the same time, that it combs all the land evenly and equally. The heavy break without hinges, is of an unbending nature; the opposite of the former in every particular, with the exception, that the teeth of both as above stated are iron. It lacerates the soil, and the intruding weeds and grass, with extraordinary force and efficacy. It is always drawn by two horses or steers, as the frame is heavy. Whereas the former harrow, demands only one. Its use is particularly beneficial, when the land, argillaceous by nature, and ponderous from dampness, and withal grassy and weedy, requires to be deeply fallowed by the plough, and afterwards torn well asunder by the harrow. Any of the large clods that are not dissolved, by the rains, dews, or frosts, thoroughly, are pulverized quickly, by its instrumentality. And the grass and weeds are forcibly

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torn from their beds, and their roots exposed without nourishment, to the parching winds, and direct rays of the sun. In this way, the stubborn nature of one of the best of soils is vanquished, and the competition, between the intruders, and the rightful owner of the sod, is destroyed. The weeds and grass thus exposed a while, become fit for combustion; and the ashes produced by burning, furnishes a dressing. The corn is thrown, into the generous bosom of the earth—well ploughed—well harrowed—well cleansed—well pulverized—and well sprinkled with manure—and it amply repays the anxious and laborious husbandman, for all his toils. What I have seen practised, to such advantage at home, it is my pleasing duty, to advise strongly here. Let every habitant then in Canada, have his two harrows, as above described, as well as his two ploughs: and these, with a pair of good horses; or good bullocks, will enable him, with a little assistance of cattle, furnished occasionally by his neighbours, to execute, all the avocations of his farm, with increased credit, facility and profit. In every ordinary case, his own pair of beasts, will be able to perform his work well: and when an

extraordinary one occurs, the Canadians, who are obliging and friendly to all, will freely lend to each other.

CHAPTER VIII.

On Manures and Dressings.

The European system of husbandry, cannot be conducted at home, or here, without a considerable quantity of stable manure and dressings. By stable manure, it is evident, I must mean, the dung of horses, cows, sheep, hogs, &c. By dressings, I mean, every other species of fertilizing stuff, as gypsum, ashes, lime, marle, virgin or black earth, clay, sand, &c. In Canada, there is plenty of manure, and most of these dressings: but they have not made, nor do not make, the proper use of them. Stable manure, has been seen formerly in this country, accumulate for years, before the offices or out-houses of the farmer: until by its accumulation, it had become a complete nuisance; by preventing the ingress and egress of the husbandman and his cattle. When this serious inconvenience had taken place, he has been obliged to make, an extraordinary effort, to rid

himself, of his supposed incumbrance : and he has transported it, to the next large river or stream, and buried his wealth in its waters. Were the Canadian aware of the injury, he was inflicting upon himself and his family, by this absurd waste of the most precious commodity of his farm, he would not, of course have done so. And that no one of science or agricultural knowledge, had not expostulated with effect, long since, upon this most destructive and ruinous practice, is astonishing. At present, the habitant does not view, the manure of his farm yard, as so formidable an enemy to him, as he did some fifty or sixty years ago. He turns out, a considerable quantity of it upon his potatoe plot, indian corn, and tobacco : and finds this transport more beneficial, than that, to the deep ravine or the devouring cataract. He has no idea however, of applying the residue of his manure, to any eligible object. His corn fields lie pining in hunger, whilst this would feed them. His little meadow patch is never manured nor dressed, although its native beauty invites, the tenderest attention. His pasture is left, to the feeble exertions of exhausted nature ; and what would gladden them

all, is allowed to rot, in useless insignificant. He should collect manure, as he would gold, for is not manure as valuable as gold, when it produces gold; and he ought to deal out one, as he would the other, with liberality, but with judgment. The stable dung, having been increased, every way, by keeping, as much cattle, during the winter as possible; and by bedding them down plentifully with the least valuable straw, of the farm it must be applied, not only to the potatoes, indian corn, and tobacco plant, but also, to all the drilled crops; as I have already described in the former chapter of tillage: and if any of that valuable stuff should remain, it ought to be bestowed upon the meadow or grass divisions. However, it is not likely, there will be a surplus of manure for the latter purpose; as ten acres of drilled crops, will take a very considerable quantity. It is more probable, there will not be a sufficiency, to serve the tillage alone: and in this case, we must have recourse to *dressings*. There is a certain period of the year, that the habitant has little or nothing to do. I mean the interval, between the sowing and raising of his crops. This time might be valuably employed, in

procuring dressings of various kinds for his farm, *which must be done*, in case, he is resolved to follow up this plan of husbandry: a plan which, if properly pursued, he will assuredly find, most profitable. If he does not wish to purchase gypsum or lime, he can perhaps procure, fresh ashes from a wood farm; or purchase ashes, that have been previously used for potash at a cheap rate; and this latter, will answer, the purposes of drill husbandry uncommonly well: for experience has proved, that the stimulating qualities of ashes, are very little deteriorated by the process of leeching. In case he calculates, that he will not have enough of fertilizing stuff for his tillage, from his stable manure, and the ashes so procured, he can, in the interval, to which I have alluded above, scour his rills or water courses for mud: viz. the head lands of his tillage fields for the earth that has been idle: open pits of marle, clay or sand, and use the product as auxiliaries to his other dressings and stable dung. The farmer should take especial care, to prepare, *always enough*, of fertilizing stuff to manure and dress the whole of one tillage division: for should his resources fall short in this par-

ticular, the regular routine of crops must necessarily be interrupted. He should also provide, every year, a light dressing, for two acres and half of his meadow, or general pasture division; for by so doing, the whole of these valuable compartments, will be dressed, in the course of eight years; and thereby preserved in excellent tilth. As for the wood pasture, the annual falling of the leaves, will be quite sufficient, to keep it in good heart; particularly, as it is never to undergo, the exhausting process of cutting with the scythe. There, is some judgment required in selecting the dressings of earth, which are wanted for tillage: if your tillage field is a stiff white or grey clay, which are common in Canada, your dressings can be rich sand or sandy loam or black moory earth. If the field is sandy or light your dressings must be clay or clayey loam or black moory earth. If the land is black moory earth, clay or sand or loamy clay or loamy sand, or small gravel, will dress it to advantage. These substances being applied to soils of a different or somewhat different nature, will have a powerful effect, in altering and meliorating their condition: and will furnish, a multitude of dressing for

the farmer ; serving as excellent auxiliaries to the dung heap. It may be of use, to lay down some general criterion, in order, to give the farmer, not only a clue, to the adaptation of dressings of enriching earths to soils under every circumstance; but to the formation or creation of land, as it is so called. The best soil we can have in any country, is a loam. To give this a general definition, it is a compound having most of the ingredients that constitute land, united in certain eligible proportions. In loam there is clay, or argillaceous matter, sand, and black vegetable earth ; and sometimes, but not often, other substances are found blended with these in small proportions: as iron ore, coal, gravel shells, &c. The best way to ascertain accurately the nature of a soil is, by chemical analysis: but the experienced farmer, can readily discover, the component parts of a soil, and their proportions pretty accurately, by ocular examination. Clay is hard, heavy and tenacious; and when a small piece wet is rubbed between the fingers, it is perfectly smooth and slippery—Sand is loose friable and heavy, and when united with some water, feels rough and

gritty to the hand. Vegetable earth or as some call it, maiden earth, is dark light and porous. If these three predominant earths are, in equal proportions, it is the best of soils, in the most extensive sense: in other words, it is the best land for either meadow grass or tillage. Equally proportioned loam then being the first quality of soil, the farmer has this as a criterion by which he is to judge of the intrinsic value of every other soil. If his land is defective, in any of the three principal ingredients, he will of course obtain, if he knows his own interest, that sort of earth, at any expense or trouble. For example, if his farm is a soil, compounded of clay and sand, he will procure black vegetable earth, and blend this with the land, to make it a loam. If the soil is compounded of sand and vegetable earth, he will obtain stiff clay for the same purpose: and finally, if the land is compounded of clay and vegetable earth, he will furnish sand: and thus, *he will create a new soil.* And to finish the whole system of amelioration, he will enrich his fictitious lands periodically, with stable dung. At other times he may add stimulating dressings

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to his fictitious* soil: and with any of those, of which I shall treat in the next chapter, he will furnish an admirable mould, fit for all the multifarious purposes of vegetation.

To this system of manuring, there can be but one possible objection; the additional trouble it will cause. But let it be considered, that the farm will become, by the prosecution of the meliorating system proposed, every day cleaner and richer: consequently, it will gradually require less labour and less manure. In Ireland, a large portion of the year, the whole of winter and the early part of spring, until the sowing time commences, is appropriated, to the useful occupation, of making compost, and fertilizing large bodies of earth, for the purposes of tillage: and the best farmers in that country, are fully aware, of the utility, and *necessity* of this provision. The drains are scoured for fine mud: the head lands are ploughed or dug with the spade, to produce clean good earth; which they

* To make a soil and dress a soil are different things in making a soil you must always supply the deficient ingredient to dress a soil you can use any very rich earth without reference to its nature or quality but it would be better to have it contrasted with the component parts of the land.

keep continually turning: the bogs and moors are laid under contribution for immense quantities of black vegetable earth. Kilns of lime are burnt to use alone, or to form compounds, or compost, as it is then denominated, with the above earths. The weeds in summer, are cut or pulled all over the grass and tillage compartments, to reduce to ashes: and the branches of small streams ransacked, for fertilizing stuff of every description. Pits are opened that contain rich gravel, sand, clay, loam, marle, &c. Near the sea coast, the sea weeds are applied; which by their primitive compound nature, produce extraordinary vegetation. Sea weeds, stimulate and fertilize. The salt they contain, stimulates plants to grow; but does not feed them: and the vegetable matter they contain, feeds them abundantly; but does not stimulate. Thus vegetation is produced, in a double ratio. By means such as these, the industrious Irish, contrive not only to produce an humble subsistence for themselves, but tend much, to serve the parent country, by their productions. Now, let me ask the active minded Canadian, why he should not make a similar exertion? Does he wish to appear less

industrious, less spirited, less intelligent, than the Irishman? The Irishman, has many difficulties at home, with which he has to struggle, that do not impede the Canadian here. He has heavy taxes and heavy rent to encounter. He is not so well fed, not so well clothed. He is more deficient in capital, than the Canadian. Labouring under all those disadvantages, he contrives however, to live, although the prices of grain, and some other commodities, produced by the farmer in Ireland, are not higher than they are in Canada. Be it even remembered, that the Canadian, has less to pay for his whole farm, than the poor Irishman pays, for one solitary acre. Let these weighty and interesting considerations then, stimulate the calculating Canadian to action; and he will soon swell his little purse to a magnitude, that will delight him. The Canadian may rest assured, I would not wish to deceive him in any particular: and I hereby assert confidently, that if he will only alter his system of agriculture, which upon the whole, is very bad, to that which is suggested, he will shortly *double his comforts and his capital*. Let him consider, that if the trouble is great, so is the profit: and that

the profit is, in a greater ratio than the trouble. Let him remember that it behoves a man of spirit, to improve his condition, by every justifiable means, that a bountiful providence, has put into his hands. That he owes this, to himself, to his children, and to the public. How much time does he waste at the chase, at the fishing lake, and perhaps at the tavern; let this valuable time then, which once lost can never be recalled, be applied to purposes, that suit and benefit him better; to the additional purposes of rational and approved agriculture. 'Tis true the Irishman can avail himself of the winter season, which the Canadian cannot do, to procure all his dressings; and to turn his enriching earths over and over again, which he will do, to great advantage, upon the principle already explained. However, the Canadian can employ himself, in the same way, at the latter end of summer, after his sowing and planting are over, and in the autumn before his harvest commences as already mentioned if not to more, at least, with equal advantage, with the Irishman. I trust therefore, ere long, we shall see, the habitant, digging his earths, sinking his pits, and mixing his

composts, in summer and autumn, for the crops of the following year: for this alteration in his plan, united with a few more equally feasible, would change and embellish the face of the country altogether: and *practically supercede the disgraceful imputation*, under which at this moment some of his brethren seem to crouch, that *in agriculture a Canadian is incapable of improvement*.

CHAPTER IX.

Stimulating Dressings.

A dressing that stimulates or excites to growth, by its sharpness and pungency, and furnishes little or no pabulum or food for plants, may with propriety, be called a *stimulator*. Such are gypsum, salt, different sorts of lime, and various kinds of ashes.

I have considered, and I believe with some reason, that those substances, which contain, in the greatest degree, pabulum or food for plants, are the best auxiliaries to exhausted soils: such as, rich vegetable earth, rotten leaves, &c. However, a stimulator may be made use of occasionally with advantage. The best way

to support and uphold the animal frame, is to furnish wholesome and nutritious viands, however, *a little stimulus judiciously administered*, from time to time, will certainly promote the vigour of the constitution. Of gypsum I cannot say much experimentally or practically. It is highly extolled by some, whilst it is as much abased and defamed by others, as a catch-penny. I have heard it said, it sometimes proves a superior dressing for grass and meadow: and I have also, heard it said, it is superlatively fine, for raising good tillage. It has evidently two advantages attending it, in common with its fraternity; it is portable, and not subject to evaporation at any season. Stable manure of every kind, laid on meadow and grass land, at a season of the year, when evaporation is great, as in summer and the beginning of autumn, is, of little or no value: but the stimulating class of dressings, and also all fertilizing earth (save argillacious) are as efficacious in summer, and all the warm season, as in the fall of the year. I have excepted argillacious clay, because it becomes so hard, when baked by the sun and wind, it cannot blend with the sod; and of course, will not, at least for the

first year, perform its duty. In Canada, were I to see, a season, had set in with very warm sun and parching winds, and consequently, my meadow or grass lands prove very backward, I would undoubtedly have recourse to gypsum in case I had no fertilizing earth or ashes previously prepared, both of which I think better. The expense of the material is little; and that of spreading it less. If it did no good, it certainly would do no harm. Some who extol its values assert, it must be laid on very sparingly: for if you do not observe this precaution, it will over stimulate the land, and eventually ruin it. They tell you, half a bushel to the acre, is a plentiful supply but I cannot assent to this quantity, for half a bushel shook ever so evenly, is scarce perceptible upon the land. One bushel or two per acre, I'm confident, is the smallest proportion, that can be made use of to advantage.—Lime, I know by experience furnishes an excellent stimulus for tillage: it produces excellent potatoes; and what that follows, is peculiarly abundant and fine.—It is however, not by any means fit for pasture lands or meadow alone; but if compounded, with any

earth, save sand* or gravel, it forms with them, an excellent compost. Salt affords a very superior stimulus, and is to be used with advantage, either upon the tillage or grass land, in the proportion of four, six or eight bushels to the acre, according to circumstances. If used in tillage, it ought to be brought as nearly in contact with the plants as possible; by shaking it, when the crop is over ground, or immediately under or over the seed. If sunk much below the plants it will do little or no good. Besides being an admirable stimulator, it gives to grass, a peculiar flavour, of which all sorts of cattle are extremely fond.—It also has the faculty, in an eminent degree, of destroying grubs, flies, worms, &c. which sometimes infest land, and spoil it, and particularly the lands of Canada.—Ashes act as a good stimulus, they are useful both in tillage and pasture. They should be used also like other stimuli in small proportions.† From what has been said,

* Lime cannot be compounded with sand or gravel as it would in that case with any kind of moisture from mortar which in this state would not serve the land.

† Ashes if applied to grass land in large quantities would cake upon it and become so hard as to kill vegetation. It must be applied gradually. The best way is to dress lightly with it now and again

on the subject of manures in this, and the foregoing chapter : it is abundantly evident, that the agriculturist has, a great variety of substances, easily procurable in this country, and at a cheap rate, to serve him, upon all occasions, in fertilizing his land. It behoves him then seriously and steadily, to "put his hand to the plough, and not look back" "until a consummation devoutly to be wished for," a national reformation in agriculture, is thoroughly accomplished.

CHAPTER X.

On Weeding.

In every country where agriculture has arrived at any degree of perfection, particular attention is paid, to the extirpation of weeds. In England, Ireland, and Scotland, you seldom or ever see a weed, annual or perennial, in a field of grass or corn. The industrious farmer, deems it the greatest disgrace, to have the curse, of his great progenitor, constantly reproaching him, face to face, for his frailty. It is not so however, with the Canadian ; for he seems to exult, in that placid philosophy, which makes him

overlook altogether, the thing and its consequences. If you ask, why he allows such nuisances unmolested to *infest the land* his own and his neighbours.* He will say with a smile, indicative of the contempt he holds you in for your particularities. *Mon Dieu, il me coute trop, a les toucher, avec les doigts.* In the first place, the trouble to take them away is little, but the damage they do, if left, is great: and in the second place, although fingers were made before pincers, yet a pincers is by far, a better instrument to remove them, than fingers. To lay jocoseness aside, I must now gravely assert, that weeds are extremely injurious to land; and especially to land in a state of tillage—I have seen a meadow so much overrun with thistles and golden rod in Canada, that it was not worth cutting; altho' the crop of hay would have been good, in case, those vegetable leeches had been prevented, from sucking the blood of the land. I have seen also in Europe a meadow, so completely devoured by ferns, that it produced scarce

* It is an absurd thing for a man to injure his own farm with weeds that are so destructive but it is an unprincipled and unfeeling omission to hurt your neighbour by allowing their seeds to extend to him.

any thing. I have likewise beheld here, the raspberry monopolize the major part of the grass land : and the cottonier do the same. And I appeal to all, who reside in this colony, have they not frequently seen the greater part of a crop of wheat, that had been in other respects well cultivated, and the soil originally good, completely starved, by a surrounding crop of thistles. What an unpleasant reflection is this, to the philanthropist, and how much more unpleasant is the consideration, when we know, that all this devastation, might be prevented, by a simple process, requiring very little trouble. In Europe, a farmer is sure to get a good crop of wheat, upon land naturally adapted to that grain, provided, he can clear the soil to his satisfaction, from all weeds and grass ; altho' his fields may have been very considerably exhausted. This well ascertained fact, speaks volumes, in favour of keeping land free from all intruders. Grass of every kind growing in the tillage land, ought to be deemed here, as it is in Europe, for the time being, in the light of a weed—In short every thing that enters into competition with the proposed crop, whether weeds, grasses, shrubs, or

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trees, or any thing else, ought to be accounted, by the intelligent farmer, as a plunderer of the crop; and should of course be eradicated. Weeds, and especially the larger ones, require and derive a great deal of nutriment from the earth. When it happens, that the land has not resources enough, to nourish both weeds and crop, the latter, must necessarily suffer, in a greater or less degree; and sometimes perish altogether. It should be remembered too, that weeds of a larger class, if not properly eradicated, having a priority of possession in the ground, spring up quicker than the crop itself; and may easily, in a short time, vanquish their feeble competitors. Thistles are removed in Europe, in the following way. The weeder puts on a stout pair of gloves, and takes an iron pincers in his hand, and with this tool, he extracts the weeds by the root. The process is simple, efficacious, and expeditious. And could be performed here, by careful boys, of ten or twelve years old. The golden rod can be pulled by the hand when young; and this operation performed twice or thrice, will enable the crop to get the mastery and keep its ground. The raspberry is destroyed in a great

measure, by cutting it, with a hook or scythe once or twice, when the sap is rising, in the early part of the year. The cottonier may be pulled with the hand, like the golden rod; or cut like the raspberry. Let the habitant, feel only once, the necessity, of destroying weeds, those greatest of all enemies to his crop, and his purse; and his native ingenuity will soon furnish him, with means for their extirpation.

CHAPTER XI.

Canadian Stock.

The Canadian horse, is a fine, though not a very handsome animal, answering well, the purposes for which he is intended—for a good working animal in the field—and a safe smart stepper on the road. The Canadian horse stands well on his legs, which are stout and clean: is short pasterned well up before: short backed: bottle ribbed: and well turned behind. His head is rather large. He is neither too high blooded, nor too low. In a word, no horse can be better calculated for Canada, when we cannot enjoy, as they do in Europe, the exquisite

sports of the field, and are little acquainted with the refined pasture of the turf.

The Canadian ox is rather a fine animal also. In the neighbourhood of River de Loup, and Isle Bourdon and other places in Lower Canada where the lands are excellent, I have seen that doubly useful animal, attain a respectable size; from four to five hundred weight. In general however, it is not found to weigh more in this province than three hundred. As it is well known, that a large ox, or large cow, or large sheep, consumes if any, very little more than a smaller animal of the same species, every man ought, to improve the size of all his animals, to the best of his ability. Some excellent oxen and cows have been introduced into this country from the United States: and it behoves us all, to imitate our industrious and intelligent neighbours, in endeavouring to bring our own breed of cattle, to the highest state of perfection. There are many comparative advantages, resulting from keeping black* cattle of a large size. We are to treat of them in two different points of view; as beasts

* Bulls, oxen, cows and calves of all kinds are called black cattle in Great Britain.

of burden, and as animals for consumption. The large animal, as a beast of burden, or working animal, is more valuable than the small. His strength is greater, his momentum or weight is greater, and his legs being longer, his step is faster. When you kill him, his hide is larger, his flesh heavier, and in all probability; his fat more abundant: for a thrifty beast, that grows to a large size, is likely to have fat in proportion to his bone and muscles. He has more room for fat, a wider surface over which it may diffuse, than the lesser animal. Hence it appears, that whether we consider the larger animal, as a working beast, or as an article of consumption, he is, *cæteris paribus*, much more valuable than the lesser. The same reasons that would induce one, to prefer the large ox, to the smaller, would induce a person likewise, to prefer the larger cow to the smaller. It is said, the small Canadian cow, gives more milk and butter than the large. But I have never heard this asserted by any, but those who had small cattle of that description to sell; and therefore I do not feel much disposed to believe them. But supposing, that the small give as much and as good milk and butter, as the

large, and further we cannot presume with propriety, still all the advantages already enumerated, as belonging to the large, are exclusively their own. The preference therefore we must yeild to the large Canadian cow. And upon the same grounds, that we prefer, the large Canadian cow, to the smaller one, we must prefer, the half breed, between the States and Canadian cattle, to the large Canadian; and the whole or full blooded States breed again, to the half blooded.

The Canadian sheep, is a wretched brute indeed. The eye furnishes instant testimony to this remark.—It is miserable in bone, flesh, fat, and fleece. It is a reflection on the species. The merino of Spain, which is only worth the fleece, is a more respectable animal. The best favoured weighs only thirty pounds, the fourth part of the weight, of a good sheep in Europe. Yet I'm confident, it eats as much forage as the English or Irish sheep. It carries, the ponderous weight, of a pound and half, to two pound of coarse wool: whereas, I have shorn, eight pounds of fine wool, from a yearling sheep in Ireland. The European sheep, has as much advantage over a Canadian sheep in fat, as it has, in meat and wool.

In truth it has much more. This being the case, and to every man from the old country I appeal for the accuracy of this calculation, I ask, why are not a number of good sheep imported without delay from England, Ireland and Scotland? Why do not spirited individuals take this business up? Why do not farming societies do so? Why do not the legislature embark in so meritorious an undertaking? As a sincere friend to Canada, I would rather have, one hundred good Leicester or South down sheep from England, or one hundred of Mr. Wade's fine sheep from Ireland, that would not cost, when landed, more than ten or twelve dollars per head, introduced here, than to have, one thousand pounds disposed of in any other public way, for the benefit of this province. His Excellency the Governor in Chief, has been kind enough to import some admirable black cattle and hogs, into the colony; and has been extremely liberal, in presenting many of them to individuals, who were likely to make the best use of them: but a breed of good sheep is now much wanting, and has always been more so, than a good stock of black cattle or hogs. An old statute passed in the time of

Charles the second, as well as I can recollect, had prohibited formerly, the exportation of sheep from England, into any of the colonies. This prohibition however, grounded upon a mistaken and absurd policy, injurious both to England and its dependencies, has been, I understand, of late removed. No impediment then now remains, to the importation of a valuable acquisition to the Canadas but a want of a becoming spirit in the community. Some person or persons of respectability ought therefore to take this interesting affair in hand. And that individual or persons, who would be instrumental in conferring this great public benefit upon Canada would in truth, deserve well of the country.

A Canadian sheep costs for a year's keeping, from one dollar to two, fed in the most economical manner. When a farmer keeps a sheep, which he has bred for a year, and sells it at market or elsewhere, he must dispose of it for the same sum it has cost him to keep it what profit then has he? None: on the contrary, he has lost the interest of his capital! But a good Leicester sheep, can be supported, I will contend, at the same expense, as a Canadian sheep; and the

Leicester, producing four times more flesh, four times more fat, four times more wool; will pay when introduced into this colony, three hundred per cent profit the first cost not being taken into calculation more than the Canadian sheep. But it may be said that such sheep as the Leicester breed will not thrive so well here, as in Great Britain: but I contend again, that this is not the case, on the contrary, that this country is, a *better* sheep country than England, Ireland or Scotland. And of this I will furnish direct practical proof. Sheep are not subject here, as they are in Great Britain, to scab, maggot, and rot, disorders which destroy many hundreds of them there. Every man in Great Britain, who has extensive sheep walks, that is large tracts of grass land (where they thrive best) appropriated to sheep, must always be furnished with quantities of mercurial ointment, mixed, with other medicinal ingredients, a portion of which he is obliged constantly to employ upon his sheep; and were it not for this indispensable prevention, his flocks would be devoured by that terrific disorder, the scab. But the scab is a malady not known in Canada. Again the rot which is very common and

destructive in Great Britain, is not, I am credibly informed, in existence in this country. This exemption here, must be owing, to the great briskness and elasticity of our salubrious atmosphere. When an atmosphere is damp and dense, it certainly predisposes to liver complaint: and rot in sheep, is analogous to liver, in the human species. Many flocks therefore in Great Britain, where the atmosphere is notoriously thick and humid, owing to the influence of the ocean which surrounds it on all sides, fall victims, to that terrible disorder emphatically there called, the rot. But sheep are subject to another very troublesome disorder in Great Britain, from which I know they are entirely exempt here—namely maggot. I have seen a sheep in England, entirely devoured by these insects in forty eight hours—Sheep in England, Ireland and Scotland, are subject to this disorder, through the whole of the summer months, and must be examined daily, to avoid this calamity. Now, if the farmers of Great Britain, paying heavy rents and taxes, find it beneficial, to keep large flocks of sheep, under all those disadvantages, how much more advantageous would it be for the farmers here, to pro-

cure at any moderate expense, a good breed of sheep, and keep those valuable animals in this country; where they are altogether free from so many evils—If the Canadian Parliament do not take this business in hand, or some Agricultural Society, let some spirited individual open a general subscription, for the purpose of conferring such a substantial and permanent benefit upon the community.

—Abstracted from the consideration of all beneficence, philanthropy and public spirit, it would be an excellent speculation, for some calculating long headed wight to adopt, for such animals, when introduced into the country, and well known, would undoubtedly sell, by auction, or by private sale, at an enormous profit. The Canadian hog is of a very bad description: he is as wretched in his own way, as the sheep is in his, and this is altogether inexcusable, for there are some excellent hogs in and about Quebec, and in the vicinage of Montreal, the breed of which, I presume, the farmer could easily obtain. We cannot blame the habitant much, for having so bad a breed of sheep: but we must censure him exceedingly, for not procuring a valuable breed of hogs. I do not wish to investi-

gate too closely, the cause of this neglect, but I trust, he will ere long improve in this particular branch of management, as well as in many others. There is an admirable breed of hogs, in the possession of Mr. Judge Burton near Quebec; and another, in the Seigniorship of Lachene, in the possession of Mr. Lancelot Robinson. I could recommend to every person a cross of these. Such a breed as this, would furnish pork for the market of Montreal and Quebec, if well fed, that could not be exceeded for goodness or size, in any country—It is a pity the habitant has not a good breed of hogs, for he feeds the miserable brutes he has, with very great care and judgement—he begins to fat generally with pumpions or pumpkins as they are vulgarly called or bran, or both united, and he furnishes with oats or peas, and nothing can be better than this management. The animals swell and get sizeable with the soft food, and they are subsequently rendered hard and firm, by the oat and the pea. There is nothing so useful, as a good example, especially when exhibited by persons in high station. Let the Seigneurs then procure a breed of the above description, or one as good; and point out

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to their less informed, and less enlightened neighbours, the great advantage resulting from this improvement. The same observation, I have made, with respect to large black cattle, and large sheep is applicable to large hogs; they do not eat more, than their inferiors; how great then must the profit be, to feed the large animal instead of the small, I am most deeply interested in this subject, because I feel a perfect conviction, of the great benefit that would accrue to Canada, this adopted foster parent of mine, were this improvement in swine quickly or even gradually introduced amongst us. The habitant would at all times have plenty of pork, of which he knows well the value, for family use, at a reasonable rate: and he could turn out a large surplus quantity for the market. And protected as we are, in this commodity, as well as in many others, by the parental hand of England, our trade in pork, would flourish to an extraordinary degree; and this trade, united with those of potash, pearl ash, timber, and wheat, independant of the hemp trade, which I hope to see established here yet, would soon swell Canada into the imposing importance, of a trading nation.

CHAPTER XII.

Canadian Draining.

The process of draining their farms is conducted in the best possible manner by the Canadian husbandmen. In case, a river or a rill passes through his land, the habitant directs to them, all the superfluous water of his farm, whether of flats or of springs. Without any science but that which nature has taught him, he discovers a fall, and that he keeps clear, with the spade or the hoe, when the best one is found he makes no change; but passes it down, from father to son. If there is no evacuating river or rill, he constructs a main drain; and in this is deposited, the redundant element. From hence it is conducted, to the parochial outlet, and from thence it flows, from the stream to the ocean—This regular and methodical evacuation of the lands, is indispensably necessary in every country, but especially in Canada; and more particularly, in the spring season, when the flood, caused by the dissolution of so much ice and snow, renders the whole country, for a few days, in appearance, a moving world of fluidity. Grass nor

grain will not germinate where water accumulates and rests,* for any considerable length of time. The knowledge of this phenomenon induces the intelligent agriculturist, to free his lands of superfluous water, to prevent them from what is termed—*scalding*. When a drain or outlet of considerable magnitude is necessary to be established *pro bono publico*, the parish is notified, and it is most gratifying to behold, with what zeal and activity, the habitants converge, to the scene of operation. The above succinct subject having been now completely *drained*, I shall forthwith turn, the *current of my thoughts*, to that of fencing.

CHAPTER XIII.

On Fencing,

The Canadian fences his farm remarkably well. Although the configuration of the fence is any thing but picturesque, still the regularity of it, conveys a pleasurable sensation to the mind. This fence

* In England irrigation is very generally practised in different districts but they take care not to allow the water to rest long on the land as that would ruin it. Water rendered putrid by stagnation destroys vegetation.

is made in general of cedar wood ; which is remarkable, although a soft wood, for its durability : is easily split, and worked, and these circumstances, recommend its use. The perpendicular pieces are called piquets, and the horizontal ones perches, and when the former are well joined together, with pins of the same material, the fence is said to last seventy or eighty years. The farmer generally takes down the horizontal piece in the fall ; and is of opinion, they last longer by being covered with the snow during the severity of the winter. Every spring, the fence undergoes a general repair ; and by this wise precaution, the crop is protected from the moment of its appearance. Were the habitant to achieve all the other operations on his farm, with as much dexterity and skill, as the formation of his fences, it would not be in our power to censure him, in the execution of his labours. And were all his maxims of husbandry, as judicious, as the principle of upturning in autumn, all his land, intended for tillage, the ensuing year ; we should have ample *field* for commendation and praise.

CHAPTER XIV.

Potatoes.

When I commenced this short essay, it was my intention, to confine myself altogether, to general arrangements and general rules. However, in the prosecution of it, I have found it impossible, to pursue this plan accurately, without defeating the primary object I have had in view, namely—the practical improvement of the farmer. This improvement, I am now convinced, can be accomplished best, in a treatise like this; by occasionally blending detail or special instruction, with elementary principle. In perusing the foregoing sheets, the farmer will perceive the propriety, of inculcating that paramount principle, of making one crop subservient to the benefit of the other by judicious rotation: but in order that, he may derive the greatest benefit, from a work that is didactic, he ought to be told also, the exact periods, for putting those crops into ground; and the exact periods for taking them out; as well as the best mode of cultivating them respectively.

There are at present so many English, Irish and Scotch in this country, who

know the value of the potatoe, and the Canadians are now becoming so fond of that root, I think, I need not make any apology, in furnishing, a few practical observations, in addition to what I have formerly written, upon the peculiar cultivation of this valuable and excellent vegetable. The potatoe was originally an indigenous production of South America, from whence it was transported to Spain, and other parts of Europe. There are thirty-six species of it, all of which have, their characteristic shades of peculiarity. Some are best for eating by man; others are only fit for cattle consumption. Some are good only in the beginning of the season. Others are good for keeping over; and will continue fit for culinary purposes, until the next crop sets in. Some are mild and mealy others stout and farinaceous. Some delight in heavy soil; others in light. Some require to be heavily covered, others should be lightly buried in the earth. It is evident, all of these must be treated somewhat differently; according to their respective properties and peculiarities: and the best way, for a man, who is not well acquainted with the management, of the particular kind he is about to cultivate, is to ob-

tain instructions from those persons, who are in the habit of tilling it to advantage. That there are as many sorts of potatoes as I have mentioned, can be proved by experiment; an experiment or process that should be often repeated, as will appear in the sequel. If the apples or knobs, which grow on the stalks of potatoes, are collected in due season, before they are disorganized by the frost; and sliced in two or three pieces and put up in a place neither too hot nor too cold, and the seed carefully separated and sown in the following spring or summer, in a rich bed of earth; it will produce the whole number enumerated. The seed is to be sown broad cast, and covered lightly with the spade. The plants in moist weather will soon come over ground; and when they are pretty stout, they ought to be transplanted elsewhere, five inches asunder every way. By the adoption of this process of transplanting, the cultivator, will gain a full year's growth; as they will attain the size of a large walnut, the first year; which otherwise, would be the growth of two: and after the second year's cultivation, similar to the first, they will be large enough for cuts, and consequently for use. It is a pleasing

task, to collect the different species ; and separate them from each other, when taken the first year out of the bed ; and recognise as it were, your old friends, in the faces of their progeny—The above is, the only method of changing altogether the potatoe : and the following is, the most expeditious mode for its partial regeneration ; an exchange of yours for that of your neighbour. It is not a bad plan to exchange with one, whose soil is contrasted with yours : but generally speaking, the farmer ought to procure, cuts from land which, is rich deep black and friable ; because potatoes, although they thrive well in any soil that is not poor or dirty, grow to the best advantage, in land such as this ; and cuts taken from those, are better than cuts, procured from a less luxuriant kind. The farmer should often change his seed and cuts : as the potatoe, fond of variety, soon gets sick of the same soil ; and then begins to dwindle or diminish in number. And he should always select, the largest and freshest for planting ; contrary to the old pernicious customs, of taking those of middling size for the purpose. He ought to make his cuts large as possible also. Take a few small potatoes, by way

of experience, cut, and sow them, and put an equal number of cuts of the same dimensions, taken from large potatoes, into the same ground; and the latter, will produce a better crop than the former. Take also, large cuts and small, from the same potatoe, and the first, will far exceed the last in the produce. The cultivator must, not only change potatoes often, by breeding his own seed, and exchanging cuts with his neighbour, and select the heaviest, and make the cuts large, but see, that his field intended for this crop, is altogether free, from weeds and grass of every description: as doubtless, no potatoes ever flourish, when put in competition, with natural or artificial antagonists of any kind. The field must be exceedingly well dressed with stable dung, a stimulator, or fertilized earth: and above all, he must be particularly careful, to commit this valuable root to the earth, in the best season. In England, Ireland and Scotland, the fittest time for planting is, from the twentieth of April to the twentieth of May: but in Canada, one must plant a month later. The great difference of produce, according as you plant sooner or later than the proper period, is truly surprising. I have

cultivated seven crops here ; and have always paid much attention to their cultivation, amongst my most experienced neighbours ; and I am satisfied, I am warranted in affirming positively, from the latter end of May, to the latter end of June, is the most eligible period for putting, the main crop of this most useful and delicious vegetable into the ground. The crop, when put into ground in the middle of June, if not altogether, will nearly double in quantity that, put into the clay, early in April or May. This fact, may be accounted for, in a measure, by the frosts checking, the early crops ; and by the powerful vegetation, we have in this climate in summer. Suffice it then to say, that if, the old country people, do not imitate the Canadians, in planting this favourite root in mid-summer, they will suffer severely in the produce, of this valuable commodity.—I have already advised to cultivate this crop in drills ; the drills are to be, three feet asunder ; and the cuts in the drills, six inches. A crop cultivated in this way, and well dressed, and planted in due season, and preserved uniformly clean, will certainly produce, from two or three hundred bushels per acre : and this re-

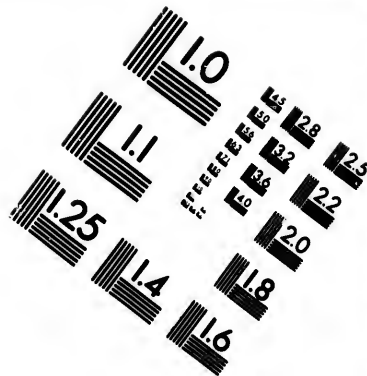
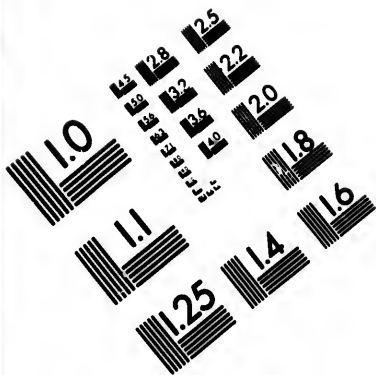
turn of an acre, at a shilling a bushel ; will pay, the rent of twenty Canadian farms, of sixty acres each, for a year. How happy then, is the lot of the habitant, who has an opportunity by cultivating one acre of his farm well will, not only to pay his own rent to the seignior but liquidate the rent, of all the branches of his family !

CHAPTER XV.

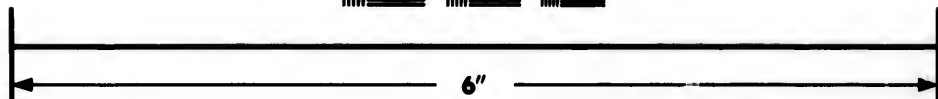
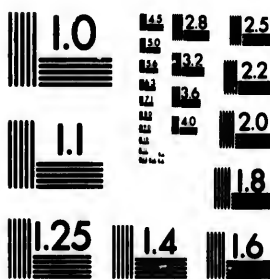
Indian Corn.

Indian corn or maize, is a beautiful useful profitable plant ; growing in a great luxuriance in Canada. Almost every habitant, makes it a point, to have a certain proportion of it, in his garden, or upon his farm. The best cultivation for it is, in drills ; one yard apart, every way ; well manured with old stable dung or ashes. It is particularly fond of the latter. You must drop two or three grains in each spot, as they sometimes fail, of a dry season. I have seen one piece of land in the woods, when cleared, and burnt with a running burn ; furnish, three and four crops, after each other uninterruptedly ; simply by changing the





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position of the plants every year; and by keeping the land at all times free of weeds and brush. Indian corn makes tolerably good bread when alone, for working men: but it contributes to make, superior bread, when mixed with flour, in the proportion of one to three. Bread made in this way, is short light palatable and wholesome. It can be made use of profitably also, in some other ways; and is likewise excellent food for cattle. Many persons prefer, the cultivation of maize to that of wheat, for the following substantial reasons. A very small quantity of seed, say two quarts, will serve an acre. An acre of it, produces double the quantity of food that, an acre under wheat; will furnish: and it grows in sandy and other light soil where, wheat will not come to perfection. The best season of the year for sowing it, is the tenth or fiftieth of May. It takes a long time to ripen; so that it must not be planted later. If sown much earlier, it may be injured by frost; but not to any great extent, for it is, in the early part of its existence, a hardy plant. At the end of the year however, it may be ruined altogether by it, when put into the ground, too late in the season. A

certain portion of the cones, should be set apart for seed ; and not dried so much, as that destined for the mill ; for in case they are exposed to much draught, they will not germinate the following year. Upon the whole, I think maize, an admirable crop : and therefore, I strenuously recommend every farmer residing in this country, to till annually a considerable quantity.

CHAPTER XVI.

Rye.

Rye although it makes inferior bread when alone, is considered by some, a profitable crop, under certain circumstances, in Canada. There are considerable tracts of light sandy soil observable here and there in this country ; which are certainly better adapted, to the growth of this grain, than to any thing else. When a farmer has, such in possession, he will do well, to cultivate rye extensively. Rye mixed with wheat flour, half and half, furnishes very good wholesome bread, although rather dark. Rye does not exhaust land, like some other white crops ; as wheat, barley, oats : and may be sown,

year after year, in the same place to advantage ; a quality, unquestionably peculiar to itself. This peculiarity is handed down to us by tradition, in the form of an adage, contrasting it, with wheat—“Sow rye after rye until you die : sow wheat, it will you cheat.” There are two kinds of rye winter and spring rye. The winter rye can be sown any time in the fall ; before the frost sets in. Spring rye may be sown in April or May. A bushel of seed is the quantity to an acre. It is to be shook broad cast, and harrowed in lightly. If you wish to make it subservient to a rotation of crops, it will grow well, in one pea or bean division after wheat, and will not injure the land.

CHAPTER XVII.

Turnips, Carrots, Cabbage, Onions, Mangle Wursel,

The turnips is an excellent esculent root, fit for the consumption both of man and beast.

As I have already described the most profitable manner of using it, I shall confine myself at present, to the relation, of a few particulars respecting it. The best period, for sowing the general crop

in Canada, is the first of February, when the black fly, has partly or entirely disappeared; for if you sow it sooner, it will certainly fall a victim, to this destructive little insect. It will take from three to four months to come to perfection; and if some frost should occur, before that period has elapsed, it will probably do no harm; as this root resists it remarkably well. If the fly should annoy, after it comes over ground, the best mode to preserve it is, to scatter, broad cast over the field, large quantities of common light dust, taken from the roads, when perfectly dry; so as to cover entirely, the leaves of the little plants; for in this situation, they are disgusting* to the fly, and it will feed upon something else. This operation, should be repeated early every morning, when the dew is upon the plant; until it throws out, the third leaf, when it will become too strong, for destruction.

* I have read some months back an advertisement in one of the papers as well as I can recollect from the Montreal farming society offering a medal or premium to any person who could discover a mode for destroying the turnip fly. I have frequently made the above experiment in Great Britain and it never failed, and I am sure if a fair trial is made in this country I shall be deemed worthy of the proposed honor, which I hereby demand. The receipt is not to be dispised because it is simple. The greatest discoveries are characterized by simplicity.

It would take a volume to describe accurately, every particular sort of turnip, and their particularities; as well as another to describe, all the various species of potatoes. I shall therefore content myself, in this brief dissertation, by recommending a few turnips, which I consider, the best adapted for this climate. The red Norfolk or white Norfolk are best for culinary purposes in the beginning of the season: and the Swedish turnip alias *bagga nuga*, is best for the same end, and for cattle, in the latter part of the year. The seed of these, should be sown in drills, two and a half feet or a yard asunder, by a drilling machine, or in case one cannot be procured, by the fingers. It ought to be sown thinly. In case the plants are too thick in any place, and have escaped the fly, some of them can be removed by the hand; so as to leave them, from four to five inches apart; and in case they promise to attain a large size, they may be thinned a second time, using those that are pulled at table. The drills, *like all other drills* ought to be kept accurately clean from weeds and grass by the plough; and under such circumstances, there is reason to expect, an abundant crop. However, it is my duty to apprise the

farmer, the turnip, is an uncertain crop in this hemisphere.

The carrot is tilled in the same way with the turnip. The only difference is it should be sown a month or six weeks sooner; as it is not so subject to the fly as the turnip. I have before described its purposes. Its antiputrescent quality causes it to be a very wholesome vegetable: and the large quantity of saccharine matter it contains, renders it highly nutritious. I have only to say it is worthy of extensive cultivation in this country.

Cabbage may be tilled like turnips and carrots in well manured drills, in the field. The plants must be previously raised in rich seed beds; the seed sown the moment the snow disappears, about the tenth or fifteenth of April. Vegetation is so great then, the plants will be ready for removing to their destination in a month. After they are transplanted, they must be watered plentifully every evening, until they are well established in the ground. Canada is not however, a favorable country for the growth of cabbage. It appears to me its vegetation is too rapid for cabbage and turnips. The early york and sugar loaf are the most delicate

for culinary purposes : and the drum head is the best for cattle.

Onions may get the same management with the former vegetables ; the seed to be sown evenly and thinly on the tops of the drills, between the finger and thumb. They grow to a large size ; are a profitable crop ; and have a fine flavour in this country.

Mangle wurzle is never cultivated in any way but in drills. This is a very beneficial crop ; as the produce when it succeeds, is immense. I have before observed, it is excellent for milk : and it fattens also remarkably well. Its cultivation therefore deserves the attention of the farmer.

CHAPTER XVIII.

Wheat, Oats, Earley.

Some persons who affect to be great connoisseurs in farming, affirm that, the best season, for sowing wheat, in this country, is the fall. Whilst others assert with equal confidence that the best period, is the spring. Some crops that have been sown in the fall, within the last se-

ven years, thirty miles north of Montreal, have failed altogether : and it is equally certain, it is difficult to find a good grain, growing from that which, has been put into the ground, in spring. As far, as my experience goes, I would prefer tilling this valuable crop, as the Canadians do, in the commencement of the year. In my opinion, the lands of Canada, are not as yet sufficiently drained, nor the climate sufficiently warm, to cultivate wheat in autumn. However, I could not wish to speak dictatorially, on a point, which is, certainly problematical: and which must be eventually decided, by a series of well conducted experiments. Whatever season, this indispensable commodity is committed to the ground, it will be necessary to observe, the following rules—to have the land well drained—well worked—well cleaned—and well dressed or manured, for otherwise, the product, in some cases, will scarce pay the labour, in a country, where labour is dear—The seed should be selected with the greatest judgment.—It ought to be plump bright, and free from all seeds, and admixture of every other grain. The bearded wheat of this, and every other country, is bad in return; it should be avoided therefore for

seed. A careful farmer will do, as they are in the habit of doing, in Europe—pick out all the bearded stalks and weeds, before he begins to thresh his sheaves for seed. Wheat is a crop that requires to be a considerable length of time in the ground, in order to bring the grain to maturity and weight. It should be sown therefore, the moment the snow disappears, and the land is found sufficiently dry, to harrow the seed. I take it for granted, the land has been ploughed the preceeding fall, for if that was not the case, the operation of sowing would be postponed too long, and the land less rich. In case the wheat has been proceeded by a regular routine of meliorating crops, in the cultivation of which, the land has been both cleaned and enriched, it will probably yield, an abundant return, proving the good effect, of uniting, industry, judgment and science.

The avena or oat is now pretty generally cultivated in Canada. The meal of it, can be converted, into wholesome coarse bread: or formed, with the addition of water, into what is called, stir-about, a repast much admired, by many in Great Britain. This is not the only modification of it, for it forms flummery,

a most grateful acidulated substance, when used in warm weather : and gruel, a delicious beverage. The oat has a peculiarity, not belonging to any other grain, well known to medical men. A coffee made of the coarsest part of the meal, burnt brown, will soothe the irritability of the stomach, when neither medicine nor any other substance, will do so. The oat furnishes, the best nutritive food for horses. It improves the wind ; and accelerates the condition of the animal. The little bean, is much used for horses in England : but it is far inferior to the oat, as it is found often, to injure the sight, of this noble animal. The oat is not sown in time in Canada ; and that is the reason, it is so much dwindled. It is sown all through the month of June, and not certain ; whereas, it ought always be shook in May. By changing the time of dissemination, the oat would obtain once more its original size, and become far more productive, when ground. Oats exhaust the soil very much : and should not therefore be sown successively, many years, in the same land. However, upon the whole, it is a fine crop ; and worthy of general cultivation. The

seed of an acre, is from one bushel to two ; and is always shook broad cast.

Barley is not much cultivated in Canada. When shelled, it is excellent in soup and forms a gruel very palatable and wholesome. When matted, ground, and fermented, it yields a large quantity of good mild spirit. It is good food for horses : and from what little has been said, it is evidently worthy of cultivation. A bushel is the quantity of seed for an acre. It is shook broad cast, any time in June ; and thrives well in this continent.

CHAPTER XIX.

Tobacco.

Tobacco is a plant, so much admired, by the Canadians and others, in this country, I cannot possibly think, of closing this little work, without bestowing some slight consideration upon it. It can be reared, in the best style, in drills, like potatoes and indian corn. The seed is raised principally in small boxes, kept in the habitant's house ; and is, when cultivated in this way, forty days ; before

it appears. It afterwards takes fifteen days to become sufficiently stout, for the purpose of transplanting it to the field. The growth of the plant, can be greatly accelerated, in the first stage, by putting the seed in a hot-bed, covered with boards. —Although it is a powerful narcotic, it is sometimes attacked with the fly and grasshopper, when young, and in order to prevent this mischief, it is enveloped, whilst transplanting, in a large maple leaf, in the form of a cone. It must be frequently watered at first, until such time, as it has established itself well in the ground. The best time for putting out the plants, is the fifteenth of May: but when the first crop of plants fail, from any cause, the second crop is transplanted, often late in June, and the beginning of July. The plant when established, grows very rapidly, so much so that, it is always necessary to curtail it, more or less those plants, which are intended for use, to prevent them from running into seed. The few that are allotted for seed, are never pruned. The plants are to be set a foot asunder in one way, and a yard distant, from drill to drill. An English acre will support, and bring to maturity, fourteen thousand seven hundred plants,

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and calculating every plant, at one half penny each, the acre will produce in cash, thirty pound twelve shillings and six pence. This is, a large sum of money, for so small a portion of land to produce, in one year; particularly in a country where farms are so cheap. This calculation, I trust, will stimulate the farmer to augmented, exertion, and induce him to cultivate, not only a small portion, for the consumption of his family, but a large quantity for foreign use.

Tobacco, potatoes, wheat, and onions, being the most profitable and productive crops, the Canadians ought always to propagate them extensively: and this cultivation conducted with European skill, upon a soil naturally good, would elevate them, far above, their present condition.

CHAPTER XX.

Conclusion.

Every honest man speaking or writing upon any subject feels himself indispensably bound to declare and publish the truth—having this principle strongly impressed upon my mind, my Canadian

neighbour, or friend, must not be offended, if I have been obliged occasionally, in the prosecution of the plan of this little essay, to put forward some unpalatable truths. When I thought, I had justifiable grounds for finding fault, I have done so unreservedly and freely; conscious that my intention in doing so was good; and presuming that, a proper construction would be put on my candour. I have found by experience, that putting a thing, appearing objectionable, in a ludicrous point of view, was the best and most efficacious mode, of making a lasting impression upon the mind—that such a style of speaking or writing was more calculated to be profitable in the end, when addressed to the individual or to a community, than if the same ideas were differently conveyed, gravely, in the form of the most unanswerable logic, or brilliantly, in the witching garb of the most embellished eloquence. I have therefore made merry occasionally, at the expense, of the ignorant husbandman, certainly, not for the purpose of insulting or hurting his feelings, but in the fond expectation, of eventually guiding and permanently serving him. The object of the foregoing sheets, has been fully developed

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in the concluding part of the preface ; and I'm confident, every honorable Canadian will give me ample credit, for the sentiments of liberality there exposed. The generous reader will recollect likewise, when I had solid grounds to praise, any national process, principle, or invention, I did so with impartiality ; and evidently, it must be allowed with gratification to myself. As a citizen of the world, I have wished to do justice unto all ; and consistently with the same character I could not have wantonly, *given umbrage to any*. I shall add no more, but fervently hope, that what has been written, may *permanently serve my Canadian brethern*.

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The instrument made use of not fit for

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